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PANDORA'S
BOX

Maritime
Archaeology



Ships brought the colonists and the precious personal belongings and supplies that they needed to start their lives anew in Australia. Later, it was through the use of ships that the earliest industries developed — whaling, sealing, pearling, guano mining. Ships were, and still are, the vehicles for trade with other countries; and, until aeroplanes became the principal means of travelling between and across continents, ships were the only line of communication between Australia and the rest of the world. Cultural and political links with Europe were maintained only through the ships that carried the mail, the government despatches, the goods, and the immigrants with their knowledge, skills, beliefs, traditions and customs as well as their household goods, machines and books. It is through ships that the Australia of today was born and developed — a fact sometimes overlooked when histories of Australia have focussed on the daring and tragedy of inland exploration.

A shipwreck preserves a record, occasionally almost intact, of a moment in time. Shipwrecks are the result of a catastrophe in which there was little or no time to remove any of the objects; nor have those objects since been subjected to the weathering of rain and sun. A shipwreck contains the evidence of the history and of the lives of the shipboard community of people who may have made a long voyage together. Only the flesh and blood of those who had begun the voyage is lacking. Shipwrecks are the physical remains of our maritime heritage.

Maritime archaeology, as a scientific discipline, was first developed in Australia at the Western Australian Museum. It came about as a result of the discovery, in the late 1950s, of the wrecks of 17th and 18th century Dutch East Indiamen on Australia's west coast. For nearly two decades the Western Australian Museum had the only recognised underwater archaeology unit in the country. Through its excellent and innovative work on the Dutch wrecks it firmly established Australia on the world scene in this developing scientific field. It was as a result of these efforts that recognition of the significance of Australia's rich underwater cultural resources became widespread and culminated in the federal government's enactment of the *Historic Shipwrecks Act 1976*. This legislation, designed to protect and preserve historic shipwreck sites, is framed in such a way that the implementation of the legislation to each individual state's territorial waters is only at that state government's request.

Although the Aboriginal people of Australia had canoes and rafts in which they could reach the islands off the coast, they were not a sea-going people. The first ships that sailed in Queensland waters were probably those of fishermen from Macassar and Chinese explorers who had found their way down the eastern Australian coast¹. In the 16th century, when Europeans developed the spice trade with the East Indies, there may have been ships that sailed on from the Portuguese colony in Timor. There is some cartographic evidence of a few of these early voyages and there may have been shipwrecks¹ — but no material remains have thus far been discovered.

Through the 17th century, Dutch spice traders, sailing due east from the Cape of Good Hope with the westerly trade winds — so called because they carried them to the islands of the East Indies and their spices — were being wrecked on the coast of Western Australia. Sufficiently accurate chronometers were not available and without them longitude could not be well determined and mariners did not know when to turn to the north. However, no such winds blew toward the eastern coast of this island

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continent and the Spanish vessels, crossing the Pacific to the Philippines, passed to the north of Australia. Perhaps, also, there were earlier mariners who, like the French explorer, the Chevalier de Bougainville, were discouraged from venturing into these waters. In 1768 he was sailing west from Tahiti and turned away when he saw—

an endless line of shoals and rocks on which the sea thundered with great violence. This last discovery was the voice of God and we were obedient to it².

The only known shipwrecks on the eastern Australian coast are those that happened after 1770 when Captain James Cook sailed northwards inside that 'endless line of shoals'. Indeed, his ship the *Endeavour*, was nearly lost on the reef that now bears its name². Endeavour Reef is only one of about 2000 in the Great Barrier Reef—a barrier of extreme hazard to navigators, and even today not thoroughly charted in some areas away from regular shipping routes.

Navigation in eastern Australian waters increased in 1788 with the first settlement, Port Jackson. It increased again after 1839 when the Moreton Bay settlement became a free town and when port facilities developed in provincial towns, such as Gladstone, Rockhampton, Townsville and Cooktown, to serve the growing populations and industries such as agriculture, grazing, timber and gold mining and a developing trade with countries to the north. Matthew Flinders and other Royal Navy surveyors worked off the north-eastern Australian coast and in the Great Barrier Reef area in the last decade of the 18th century and the first half

Divers working on the *Pandora* site (photograph Pat Baker).



of the 19th century. However, the hydrographic data gathered were very incomplete. Inadequate charts and the coral reefs with strong tidal currents resulted in the many shipwrecks that occurred and still do occur in these waters. Indeed, every year sees the addition to the long list of vessels—now more than 2000—that have come to grief off the Queensland coast.

It was the mutiny on the vessel HMS *Bounty* under Lieutenant William Bligh which, in due course, led to one of Australia's most historically important shipwrecks in Queensland waters—resulting, nearly 200 years later, in the involvement of the Queensland Museum in maritime archaeology. On 29 August 1791 HMS *Pandora*, a 24-gun frigate built in 1779, was wrecked on a small reef at the northern end of the Great Barrier Reef at the eastern entrance to Torres Strait. Sailing under the command of Captain Edward Edwards—an inhuman martinet—*Pandora* was returning 14 of the *Bounty* mutineers to England for trial. The mutineers had been captured in Tahiti where they had remained while their erstwhile collaborators sailed on in the *Bounty*. On their capture the prisoners were locked into an 11 x 18 foot (3.4 x 5.2 metres) box not more than 1.75 metres high on the deck of the *Pandora* where, starving and vermin infested, their hands and legs in irons, they sweltered for five months while Edwards unsuccessfully searched the tropical Pacific for the other mutineers, who were now safe on Pitcairn Island. When the *Pandora* struck, Edwards had been trying to find a way through the reef. In desperate straits he let three of the prisoners out of their box to help with the pumping. The other 11 remained imprisoned until, a moment before the ship sank, seven saved themselves when the master-at-arms threw them the keys of the irons, and a brave boatswain's mate opened the hatch through which they escaped³.

In November 1977 the wreck of what was believed to be HMS *Pandora* was discovered. The Commonwealth and Queensland governments shortly afterwards declared the *Historic Shipwrecks Act* to apply to Queensland and gazetted the wrecksite as protected against disturbance or vandalism. In April 1979 the federal government



Divers working with the water dredge under the survey grid near the stern of the *Pandora* site (photograph Pat Baker).

commissioned two maritime archaeologists from the Western Australian Museum, G. Henderson and P. Baker, to examine the site to confirm its identity and to evaluate its archaeological significance. The results were conclusive. The wreck was, indeed, that of *Pandora* and the archaeological potential, because of conditions on the site which appeared to be likely to favour preservation of much material, was enormous. Unlike many ships wrecked on coral reefs, the *Pandora* did not break up before she sank, and she settled onto coral sand in deep waters—34 metres—out of the reach of breaking surf that would have pounded and scattered her remains. Objects that were on the ship at the time she sank are likely to be in place, contained within the apparently almost entire hull, protected by the sediments that have been settling over the site for nearly 200 years. These sediments have excluded the oxygenated water that would have hastened the deterioration of many of the artefacts. Further, she was an up-to-date naval vessel, and historical information gained from the study of the equipment on board was thought likely to be significant.

The Queensland Museum Board of Trustees, as early as 1972, noting the successful work being done in Western Australia, had given serious consideration to the future entry of the museum into the field of maritime archaeology. The discovery of *Pandora* and the declaration of the federal historic shipwrecks legislation to apply in Queensland waters brought the museum closer to a commitment to the establishment and development of a maritime archaeology section. There was also a pending application to have gazetted another Queensland wreck—that of SS *Yongala*, which in 1911 had disappeared without trace off Townsville.

On 1 August 1980, under the terms of the Act, the premier nominated the museum as the competent authority to administer the legislation in Queensland and the director of the museum as the Queensland delegate to the federal minister of Home Affairs—now Arts, Heritage and Environment. The museum was now fully committed to a responsibility for maritime archaeology, a responsibility officially assumed in January 1981. In June of the same year Ronald Coleman was appointed maritime archaeologist, becoming curator in 1982. He had had many years involvement with investigations on shipwrecks in other parts of the world and, while employed as the display designer on the museum staff, had done the preliminary work associated with the establishment of maritime archaeology in the institution.

Among Coleman's first activities, was a preliminary inspection and photographic survey of the *Yongala*, which had been declared a protected site on 5 June 1981. In this survey he was associated with film-makers Ron and Valerie Taylor who were producing a documentary television film on the *Yongala* wreck. Work on a register of the shipwrecks off the Queensland coast also began and by May 1982, after archival research, the list of some 2000 wrecks had been compiled.

The next problem to be tackled was that of personnel. Work on submerged wrecks requires teams of people—many more than could ever be maintained on the permanent staff of the museum. A source of man-power and skills presented itself in the growing number of amateurs in the field. Thus, in July 1982, Coleman formed the Maritime Archaeological Association of Queensland Inc. to bring these amateurs together. This association gives members an opportunity to participate in the museum's work and, at the same time, to gain practical experience in the field. It also provides the experienced volunteer staff that the museum regularly needs to pursue its maritime archaeological programme. It



The *Pandora* in Matavai Bay, Tahiti (painting by courtesy of the *National Geographic*).

enables the museum to conduct training courses and provides the back-up organisation that contributes to the co-ordination of field parties. The membership of the association quickly grew to more than 100, and, with the experience gained as a result of participation in museum programmes, the association is now able to initiate some of its own. In addition to the assistance in the field provided by this association, the employment of staff on National Estate grants helped to alleviate the serious shortage of professionals.

Now, with strong back-up personnel it was possible to undertake a variety of field projects. In December 1982 a site inspection of a wreck that had been found 75 nautical miles northeast of Townsville was conducted. The wreck was subsequently identified as the *Foam*, a 'blackbirder' wrecked in 1893 while en route to the Solomon Islands with Kanakas being returned from the Queensland sugar-cane fields. The wreck was particularly interesting because of the quantity and variety of trade goods it contained. The study and description of the trade goods was of interest to anthropologists and ethno-archaeologists studying the influence of European penetration on the indigenous peoples. Both the *Foam* and the



Preparing to lift recovered artefacts to the surface from the *Pandora* site (photograph Pat Baker).



Some of the artefacts recovered from the *Pandora* site.

Yongala were inspected again at later dates to monitor their condition and ensure that the sites were not being vandalised.

Another project was the investigation of a mysterious wreck site at Happy Bay on Long Island in the Whitsunday Group. The wreck had been romanticised as a Spanish galleon — yet another one of several such fabled wrecksites reputed to exist around the Australian coast — because its timbers were thought to be mahogany. The wrecksite was investigated and recorded and the remains were shown to be those of the *Valetta* dating from 1825. The ship had been built in Calcutta in 1821 and the main structural timbers were, not surprisingly for an Indian-built vessel, teak and not mahogany. Early in 1985 the maritime archaeology section conducted surveys off Lady Elliot Island to identify shipwreck sites and remains in that part of the Capricornia section of the Marine Park at the southern end of the Great Barrier Reef.

Meanwhile, in late October 1983, by now with some experience of working in Great Barrier Reef waters, with confidence in the capacity of the team and with support and encouragement from maritime archaeologists and historians both in Australia and overseas, the first expedition to HMS *Pandora* was organised. The excavation of the *Pandora* is possibly the most ambitious project in maritime archaeology ever undertaken in Australia in terms of difficulty of access, depth of the wrecksite, and the number of artefacts that probably will be recovered and that will require extensive and sophisticated conservation treatment. A team of 20 professional underwater archaeologists gathered from around Australia and overseas. The museum conservator joined the party to supervise treatment of the excavated material. The wreck lies 100 kilometres off the mainland coast in a remote area east of Cape York. The team of SCUBA⁴ divers and support personnel had to be maintained on-site over a period of eight weeks and the logistics were complex. The diving programme was strictly supervised to ensure the divers' safety at 34 metres — and this, of course, restricted the time that each person could work on the site. The weather was a critical but uncontrollable factor. October was chosen as a time before the cyclone season when the prevailing south-easterly winds would not be a problem. However this choice was not altogether vindicated and fine weather did not persist

throughout the eight weeks. Nevertheless, the site was surveyed, mapped, transects were laid down and, in a preliminary excavation, the remains of the doctor's shipboard surgery were found with unguents and medicines still stoppered and in place in their jars. The expedition was documented by David Flatman Productions in the film 'HMS *Pandora*: In Pursuit of the *Bounty*', subsequently televised nationally in Australia and sold overseas. The second *Pandora* season in November 1984 was equally successful⁴. A larger expedition is planned for October 1986.

Maritime archaeology is costly. It involves large teams in the field for long periods, ship charter, tenders, computer data compilation, acquisition and use of survey equipment, conservation facilities for immediate treatment of materials recovered, and the complex logistical organisation necessary to move personnel, equipment and supplies; as well as provisions to deal with contingencies such as bad weather, loss of equipment and injuries to team members. The more remote the site from land and the deeper the wreck the more expensive an expedition becomes. The *Pandora* site ranks high on both counts. The financial resources required are of the order that generally would be beyond those of a state museum. Federal government funding through the Department of Arts, Heritage and the Environment complemented a state subsidy for the *Pandora* and other projects and to some extent this alleviated the problem. However, contributions from private persons and commercial organisations have been generous and without them the programme could not have proceeded at the level maintained since it began in 1981. Captain Philip Gibson, a consultant appointed by the board of trustees, advises on aspects of the *Pandora* project to ensure that the funds received are used in the best possible way.

Donations from the corporate sector in excess of \$10,000 came from Arcom Pacific Pty Ltd and Entercomp Pty Ltd for computer software and hardware; NEC Information Systems supplied, maintained and updated computer hardware; Grace Brothers transported equipment to and from points of departure and gave additional funding. The Inflatable Boat Centre supplied a number of Zodiac inflatable boats for work on-site and site access; Bendeex Pty Ltd contributed the all-important complex oxygen safety systems for the divers; David Flatman Productions supplied funds and, in filming the operations at the *Pandora* site, made it possible for the world to share in these excitements, as did the National Geographic Society which, in addition to a generous cash donation, published a richly illustrated account, of the *Pandora* saga. The Queensland-based brewer, Castlemaine Tooheys, commissioned the construction of a valuable model of the vessel and, by provisioning the first expedition with a generous supply of its product, averted a serious freshwater shortage when the desalinator on the work vessel broke down. A large cash donation came from John Walker and Sons Ltd, and Flamingo Bay Charters provided services including the use of the vessel, *Flamingo Bay*. These contributions together with many more from individuals and other commercial firms have made it possible for the programme to

proceed effectively and for those taking part to have confidence in the equipment that ensures their safety⁵.

Not the least part of the cost of establishing a maritime archaeological section is that associated with the provision of conservation staff, facilities and equipment to preserve, for study and future display, the myriad artefacts of many materials—bone, leather, wood, metal and even textiles and paper—that can be raised from a wrecksite. Some objects recovered are huge, such as cannon; while others, such as needles or tiny glass trade beads, are minute. On being raised, all require conservation treatment to prevent accelerated deterioration owing to the combined effects of salt and exposure to fresh air. Treatment of a cannon may need upwards of a year to stabilise it against further corrosion. In 1980 the museum had established a conservation section to start to address the long neglected problem of deterioration in the collections—notably the anthropological collections. However, the conservation section inevitably became deeply involved in the preservation of objects, particularly *Pandora* artefacts, presented to it by the maritime archaeologist.

Meanwhile, linking the new maritime archaeology section with the long history of the museum, the section considered one of the earliest maritime artefacts acquired by the museum. In the board of trustees minutes of 3 June 1906 there appears the following report:

a small bronze cannon which had been purchased.....was found on a northern reef by the black, supposed to belong to a wrecked spanish vessel.

It came to the museum from the Office of the Chief Protector of Aboriginals and the purchase price was £2.0.0 It was picked up on the northern point of Ashmore Reef in Torres Strait and the natives who found it said there were two other larger cannon near it, as well as the 'large timbers of a vessel'⁶.

Now, some 80 years later, it has been established that this early acquisition to the museum's collection of maritime artefacts is of French origin, one of a type manufactured in the early 19th century. It was made specifically for the French navy for shipboard use and it would have been effective against hostile natives in dugout canoes—it was light, easily used and portable and would fire rounds of grape shot with enough force to penetrate skin and bone.

When the mystery of how it got to Ashmore Reef is solved, one more piece of the history of navigation and exploration in Australian waters will be known.

To a maritime archaeologist it is not surprising that others should find shipwrecks fascinating. Much of history is mysterious and history preserved in the seas is particularly so. In the museum the maritime archaeology section will continue its exploration of these mysteries. From the study of the sites and the objects recovered from the sea, it will add to the knowledge and understanding of the events and the people that have made Australia.



Flint-lock Espingole—model ANIX. Made in Ruelle, France, in the first half of the 19th century, for the French Navy. In 1906 it was purchased for £2 by the museum, from Torres Strait Islanders who had recovered it from Ashmore Reef.